

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: October 29, 1996
Date Received: October 24, 1996
Project: Metro Self Monitor, PO #M73117
Date Samples Extracted: October 24, 1996
Date Extracts Analyzed: October 28, 1996

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE
FOR CHROMIUM, COPPER, NICKEL, AND ZINC
USING METHOD 6010**

Samples Processed Using Method 3005A
Results Reported as mg/L (ppm)

<u>Sample ID</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M73117	0.50	0.34	0.46	0.08
Method Blank	<0.05	<0.05	<0.05	<0.05

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**QUALITY ASSURANCE RESULTS
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
(METHOD 6010)**

Laboratory Code: 73510 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>	<u>Acceptance Criteria</u>
Chromium	mg/L (ppm)	0.50	0.48	4	0-20
Copper	mg/L (ppm)	0.34	0.32	6	0-20
Nickel	mg/L (ppm)	0.46	0.43	7	0-20
Zinc	mg/L (ppm)	0.08	0.07	13 a	0-20

Laboratory Code: 73510 (Matrix Spike)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
				<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	0.50	92	92	80-120	0
Copper	mg/L (ppm)	5	0.34	90	88	80-120	2
Nickel	mg/L (ppm)	10	0.46	93	95	80-120	2
Zinc	mg/L (ppm)	5	0.08	99	99	80-120	0

Laboratory Code: Spike Blank

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>% Recovery</u>		<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
			<u>MS</u>	<u>MSD</u>		
Chromium	mg/L (ppm)	5	98	99	80-120	1
Copper	mg/L (ppm)	5	96	94	80-120	2
Nickel	mg/L (ppm)	10	99	100	80-120	1
Zinc	mg/L (ppm)	5	104	103	80-120	1

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Beth M. Albertson, M.S.
Bradley T. Benson
Kelley D. Wilt

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044

October 29, 1996

**INVOICE # 96ACU1029-2
DUPLICATE COPY**

Accounts Payable
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

RE: Project Metro Self Monitor, PO #M73117: Results of testing requested by
Gerry Thompson, Project Manager for material submitted on October 24,
1996.

1 water sample analyzed for
Chromium, Copper, Nickel, and Zinc
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due

\$ 65.00

ALASKAN COPPER

MAINTENANCE WORK ORDER

WORK ORDER#: RMC16203 CFT/SKILL: 02-MECHANICAL CATEGORY: 02-SCHEDULE

ORIG: KEITH HOWELL 145PM

TEL#:

APPV'D:

EQUIPMENT#: 3563

DEPARTMENT: 18

ACCOUNT#: 3563

BUILDING : 4700

AREA/ROOM :

MACH IS DOWN: NO

SUPV : RL - LOHSE, RON

EMPL#1:

EMPL#2:

EMPL#3:

STAT: OPEN

PR'TY:

ALT:

REASON:

DATE - OPEN: 10-31-96

REL'SE: 10-31-96

SCHD: 10-31-96

CLSD:

EST. - HRS:	3.00	MAT'L:	0.00	SUB:	0.00	TOT'L:	135.00
ACT. - HRS:	0.00	MAT'L:	0.00	SUB:	0.00	TOT'L:	0.00

WORK : GENERAL SUPPORT @ 4700
TO : DRAIN WASTE OIL FROM CONTAINER, SEE
BE : KEITH FOR MORE INFO.
DONE :

TYPE/CODE OF WORK
REQUIRED

GENERAL SUPPORT

TIME TO COMPLETE:

DATE:

PERFORMED BY:

ACCEPTED BY:

AKC-0011958

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October 29, 1996

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Enclosed are the results from the testing of material submitted on October 24, 1996 from your Metro Self Monitor, PO #M73117 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson
Chemist

keh
Enclosures
ACU1029R.DOC